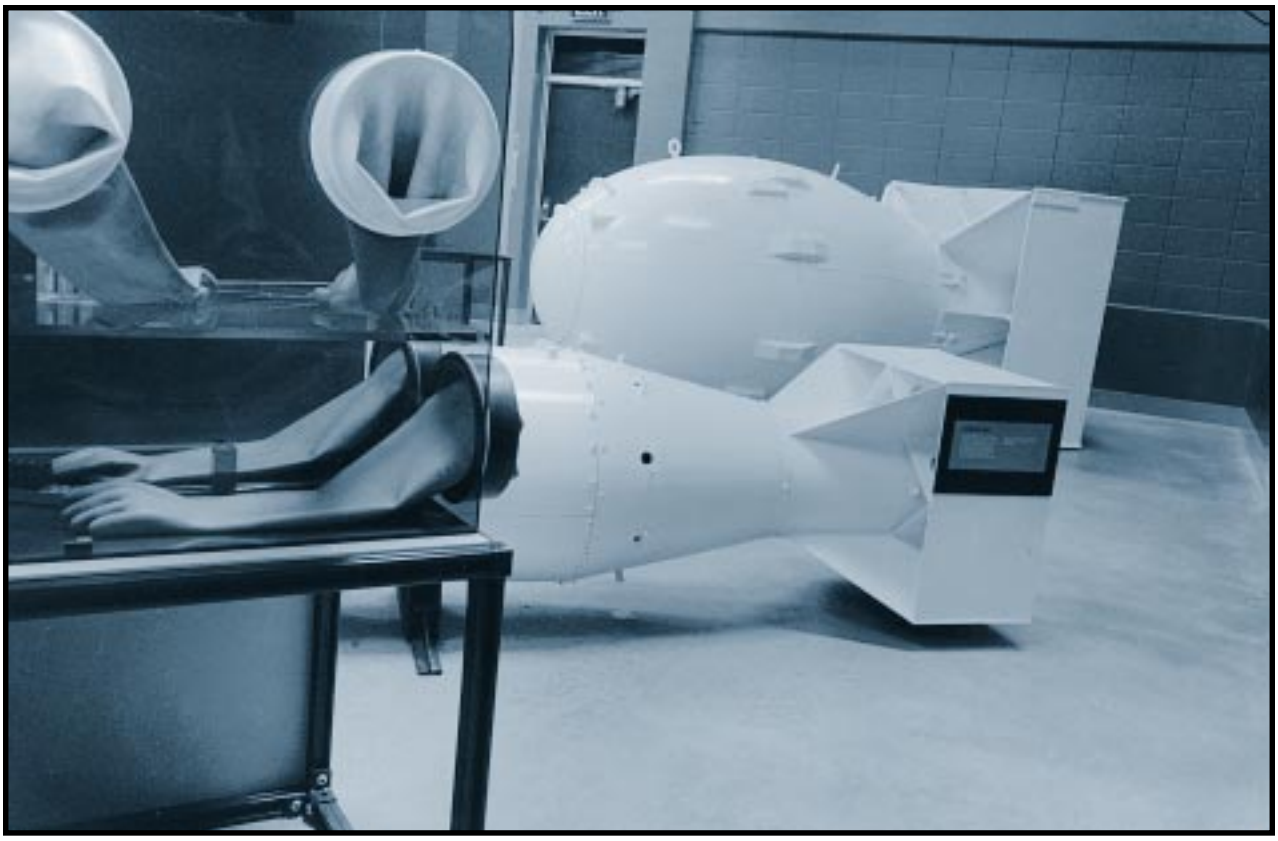
VI. Transition to New Missions



The first nuclear weapons. In the background is a duplicate of the casing for the Nagasaki plutonium bomb. In the middle distance is a duplicate of the casing for the Hiroshima uranium bomb. In the foreground, a model of a glovebox used for the handling of plutonium. *Bradbury Science Museum, Los Alamos, New Mexico. July 13, 1982*.

All of the major facilities in the U.S. nuclear weapons production complex were shut down in the late 1980s. For several different reasons, the end of production was quite sudden and largely unexpected. Incidents of mismanagement and contamination at U.S. nuclear weapons sites led to a series of Federal investigations into safety and environmental practices. These investigations pointed out that most of the Energy Department's weapons plants, built several decades ago, were at or near the end of their design life and unable to comply with current environmental and safety standards and regulations. Many operations were therefore discontinued while alternatives for weapons production were being considered. At about the same time, the Cold War began winding down, and in 1991 the Soviet Union collapsed, bringing the nuclear arms race of the Cold War to a sudden end.

The Department's increased emphasis on environmental management requires more than doing different tasks. The transition involves both engineering and institutional challenges.

Engineering Challenges

Because the shutdown of many facilities was unexpected, hazardous materials often remain there, sometimes having been left in the middle of a process step. Some scenes are reminiscent of the end of World War II, when workers in factories put their tools and papers down and never returned. In the case of the nuclear weapons complex, however, the work stopped before it was certain that it would not be restarted, and the tools and materials are extraordinarily hazardous. The Department currently maintains more than 20,000 buildings and structures, such as cooling towers for old nuclear reactors, that will eventually require decommissioning. Hence, the sheer number of facilities requires a systematic transi-

Guard tower and security barriers at the Pantex Plant near Amarillo, in the Texas panhandle. Thousands of plutonium triggers from dismantled warheads are stored in bunkers at the site. *Pantex Plant, Texas. November 18, 1993.*

tion process for stabilization and preparation for decontamination and decommissioning.

Stabilizing and safeguarding these nuclear materials sometimes requires operating the facilities to prepare for cleanup. For example, workers are draining liquids from tanks to prevent leaks and processing chemicals to prevent fires and explosions. Because many of these tanks and chemicals contain plutonium and other nuclear materials, they require a level of safety and security at least as stringent as that for weapons production. In some cases renovations are necessary to bring the facilities into compliance with environmental and safety requirements.

The facilities in transition must first be stabilized. Until that step has been been completed, the buildings are not safe for cleanup. Not only is the stabilization work necessary for reasons of safety and worker protection, but it can also dramatically reduce the costs of long-term maintenance. Every dollar saved in annual maintenance costs is worth several dollars because the backlog of old facilities is so large that surplus facilities may wait years, and often decades, before they can be decontaminated.

Institutional Challenges

The institutional challenges of environmental management may be even more complex than the engineering tasks. To fulfill its new missions successfully, the Department must itself undergo a major institutional transformation. It must institute fundamentally different operating practices from those historically used to produce nuclear weapons. Complicated tasks in waste management and environmental restoration require better communication and coordination among facilities and operational divisions. Sustainable environmental and public-health policy depends on the involvement of citizens, State and local governments, Native American

All of the major nuclear weapons factories shut down in the late 1980s. At the time, the Department had made no plans to keep them shut down.

Tribes, and other Federal agencies. Such participation can be meaningful only with significant openness. Finally, cost-effective environmental management will require contracting reforms that reward efficiency and outstanding performance.

Need To Know

In the interest of national security, nuclear weapons workers generally knew only their particular jobs. As the Atomic Energy Commission said of the Manhattan Project:

Just as a man-of-war was compartmentalized to prevent a single torpedo from sending the vessel to the bottom, the [Manhattan Project] had been subdivided to prevent some indiscreet or disloyal individual from revealing the whole enterprise to the enemy.

The Atomic Energy Commission used these words to describe the systemwide compartmentalization of knowledge deemed essential to building the first atomic bombs. The intentional narrowing of the field of knowledge, commonly called the "need-to-know" principle, asserts that there is no real need for individuals to have information beyond the minimum needed for their jobs. This approach to security pervaded the complex during the Cold War.

Knowledge of the whole picture is crucial to environmental cleanup. A narrow focus can hinder progress. It is now common practice in most industries to identify wastes that come from each part of a process and to determine how best to minimize or prevent their generation. If it did not understand these connections, the Department of Energy could create other problems while attempting to resolve the original concerns. For example, how should the Department manage new wastes that will be created from cleaning up contaminated soil, water, and buildings?

From Secrecy to Openness

Secrecy remains essential to maintaining the nuclear weapons stockpile. During the Cold War, a large amount of information about the nuclear weapons complex, including information on issues related to the environment, safety, and health, was withheld from the general public because of concerns about national security.

In keeping with the Clinton Administration's focus on government accountability, Energy Secretary Hazel O'Leary has begun an "openness initiative" to encourage informed and constructive citizen involvement.

This initiative has identified many types of information that no longer need to be kept secret to protect national security or prevent nuclear proliferation. Since December 1993, the Department has opened its files on previously unannounced nuclear tests, its data on inventories of plutonium and other material, and various information useful for more effective environmental management.

Two Statements by John Glenn, U. S. Senator, State of Ohio

1985: Hearing of the Governmental Affairs Committee, U.S. Senate, in Cincinnati, Ohio:

"Although most of us have become aware of the problems at Fernald only recently, the situation has existed for three long decades. And although we may not be able to do anything about the past releases of radiation from the plant, I strongly believe that the public has a right to know about such releases.

"We must see to it that what happened in the past is never repeated. . . . I'm fully aware of the economic and national security benefits the plant provides, but, as I said when I toured Fernald last month, while plants like Fernald are essential to the security of our country, we must see to it that the cost of that security does not include the health of our people."

1994: Confirmation hearing before the Governmental Affairs Committee, U.S. Senate, for Alice Rivlin as Director of the Office of Management and Budget:

"In 1985, the people at Fernald in Ohio wanted me to come out. They had problems there. I went out, not knowing how valid their concerns were, and found that they were very valid. We did General Accounting Office (GAO) studies then of the other spots in the nuclear weapons complex all over the country, some 11 States and 17 different major sites. Cleanup had been put away at that time. 'The Russians are coming; we have got to produce.' 'What are you going to do with the waste?' 'Put it out behind the plant.'

"... When we started this, the General Accounting Office estimated that to clean up the whole weapons complex was somewhere between $8 to $12 billion. Now the latest GAO estimate is $300 billion, if we can figure out how to do some of it, and over a 20- to 30-year period. . . . I am concerned about how we take care of these long-term items that are going to require a year-by-year effort. . . . Cleanup is not going to get cheaper as we go along and it is something that does have to be done because of the danger to our communities."

David H. Nochumson: One Whistleblower's Story

David H. Nochumson, manager of the Radioactive Air Emission Monitoring program at the Los Alamos National Laboratory in New Mexico, took his job very seriously. He knew that checking for radioactivity in air emissions was vital to protecting the health of people in and around the lab, and he knew the people whose health would be affected by how well he did his job.

Nochumson, who had earned a Bachelor of Science degree in chemical engineering from Rutgers University and a Ph.D. in environmental engineering from Harvard, was hired by Los Alamos in 1978. In 1990, soon after he started a new assignment at the lab, he discovered that the lab had not complied with the requirements of the Clean Air Act for monitoring stack emissions of radioactive materials. He submitted a plan to bring the lab into compliance with the law, and a request for additional funding, but his supervisors did not implement it. He repeatedly explained the safety and noncompliance problems and the need for greater funding.

One supervisor stated that he "could do away with" Nochumson's position; others told him to write only positive things about the lab and to seek counseling. Nochumson filed a complaint with the Department of Labor in June 1991 and stopped working in the same position.

On September 27, 1994, a judge in the U.S. Department of Labor issued a decision in favor of Nochumson. The judge ordered the lab to reinstate Nochumson and pay him back wages and damages for lost work and emotional distress. The parties are now working together to settle this dispute.

The backlog of secret documents is monumental, roughly equivalent to a column of paper 3 miles high. Through its new Office of Declassification, the Department is working to open the records on such issues as highly enriched uranium, nuclear arsenals, health and safety, experiments with human beings and hundreds of other subjects. The Department is also reviewing the original secrecy rules mandated by the 1946 Atomic Energy Act.

Whistleblowers

An important part of the new policy of openness is encouraging "whistleblowers" to report lack of compliance with regulations, mismanagement, inefficiencies, fraud, and other problems. To highlight this initiative, in November 1993, Secretary of Energy Hazel R. O'Leary met with whistleblowers at a conference called "Protecting Integrity and Ethics." She has issued a call to "celebrate whistleblowers" and has promised to implement a policy of "zero tolerance" for reprisals against them.

Citizen Involvement

Many of the program's environmental questions cannot be answered with engineering solutions alone. Decisions about the most important questions can only be made through a national debate and cooperation among government officials; workers; contractors; all interested Federal, State, and Tribal parties; and informed citizens.

The important questions include the following:

- Who should decide the extent and schedule for cleaning up sites?
- How can public-health risks that might be incurred over hundreds or thousands of years be balanced against immediate risks to cleanup workers?
- What levels of risk are "acceptable" when they might affect large populations or extend over long periods?
- Who should oversee cleanup efforts and evaluate their results?

Contract Reform

The Department of Energy's current contracting system fulfilled the nation's Cold War priorities of designing, building, and testing nuclear weapons secretly and quickly. When production was the primary mission, one large contractor was responsible for virtually all services at each plant site, and that contractor was protected from most financial risks by the terms of the contract.

While appropriate for Cold War production, these types of contracts are not the best way to reach the new objectives of the Department. Contractors involved in environmental management activities will be required to demonstrate sound business practices and assume greater financial responsibility for activities within their control.

The Department of Energy, with fewer than 20,000 Federal workers and more than 140,000 contractor employees, has undertaken several initiatives to reform the way it

Secretary of Energy Hazel R. O'Leary with "whistleblowers" at a symposium entitled "Openness and Secrecy: Establishing Accountability in the Nuclear Age." The Secretary encourages dialogue with those who question the Department's operations and environmental compliance. She was a keynote speaker at this symposium. In the back row from left to right: Jim Vissar, Jeff Peters, Stephen Buckley, Government Accountability Project attorney Tom Carpenter, Casey Ruud, William S. Armijo, and John Brodeur. In the front row from left to right: Marlene Flor, Gaidine Oglesbee, Sonja Anderson, Secretary of Energy Hazel R. O'Leary, Gary Lekvold, Tim Powell, and Inez Austin. Kneeling: Jim Smith and Ed Bricker. *Washington, D.C. May 18, 1994.*

does business. Contract reform initiatives emphasize competition and the development of clear, objective performance criteria and measures. Performance-based incentives are focused on the accomplishment of the Department's strategic mission and reward contractors for fulfilling clear programmatic objectives. The Department is hiring more federal workers for onsite management and for verifying the performance of contractors. The Department has also begun to reallocate the financial and legal risks inherent in operating its sites in order to hold contractors more accountable.

As more facilities make the transition from production to environmental management, the Energy Department will continuously review contracting practices, competition, incentives, and penalties in order to support the paramount objectives of (1) protecting public health and the environment, (2) minimizing risks to workers, and (3) using public funds and resources efficiently and responsibility.

> The Department of Energy is removing the cloak of Cold War secrecy that has shrouded its nuclear weapons program for 50 years....
>
> The Cold War is over, and we're coming clean....
>
> In the old days, we decided, announced and then defended policy. In the new days we must engage the public, debate, decide, announce and then go forward.
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> **From Secretary of Energy Hazel R. O'Leary's December 7, 1993, press conference announcing the openness initiative**